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## Class 379 TELEPHONIC COMMUNICATIONS

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1.01	DIAGNOSTIC TESTING, MALFUNCTION INDICATION, OR ELECTRICAL CONDITION MEASUREMENT
1.02	. Of audio message storage and retrieval
1.03	. Of data transmission
<u>1.04</u>	Qualifying line for data transmission
<u>2</u>	. Including fault responsive disconnection of tested component
<u>3</u>	. Of hybrid or echo suppressor or canceller
4	. Of repeater
<u>7_</u>	. For detection of eavesdropping device
<u>8</u>	. With blocking of normal usage
<u>9</u>	. Of centralized switching system
9.01	Software compatibility
9.02	Maintenance console
9.03	Trouble ticket reporting
9.04	Record or report generation
<u>9.05</u>	Backup system
9.06	Of line interface circuitry
<u>14</u>	Of plural exchange network
<u>14.01</u>	Fault segmentation (e.g., error location in network)
<u>10.01</u>	By automatic testing sequence
10.02	By call generator
10.03	Script file generation or execution
<u>11</u>	Routiner
<u>12</u>	With dedicated testing line or trunk
<u>13</u>	Of call timing or charging equiment
<u>15.01</u>	Of switching equipment or network element
15.02	Advanced intelligent network (AIN)
15.03	Provisioning of service
<u>15.04</u>	Of plural AIN elements
<u>15.05</u>	Determining fault location
<u> 16</u>	Of switching path
<u>17</u>	Of switching selector
<del></del>	or switching selector

18 19 20 21 22 22.01	<ul> <li> By use of call address signal</li> <li> Rapid manual connecting structure for test equipment</li> <li> Of switchboard element condition (e.g., lamp)</li> <li>. Using portable test set (e.g., handset type)</li> <li>. Of trunk or long line</li> <li> By loopback</li> </ul>
<u>22.02</u>	By analysis of injected tone signal
22.03	Fault detection or fault location on telephone link (e.g., continuity, leakage)
22.04	Of digital loop carrier
22.05	Pair gain test controller
<u>22.06</u>	Having special connector
22.07	Telephone multiconducting wires (e.g., tip, ring and ground wires)
22.08	Noise
23 24 25 26.01	<ul> <li> Of line signalling</li> <li> Electrical parameter measurement (e.g., attenuation)</li> <li> Conductor identification or location</li> <li>. Testing of network terminating interface, subscriber trunk interface, or service function</li> </ul>
26.02	With a programmable or self-test device
27.01	. Testing of subscriber loop or terminal
27.02	By generating call signal
<u>27.03</u>	By analysis of testing signal
27.04	By automatic testing sequence (e.g., programmable, test, script or test call generation program)
27.05	Having protection circuit (e.g., surge or short circuit protector)
<u>27.06</u>	Having electromechanical switch or relay
27.07	Having plugging maintenance or test module
27.08	Including sampling measurement technique
<u>28</u> 29.01	<ul><li> Of data transmission instrument</li><li> Terminal arrangement to enable remote testing (e.g., testing interface)</li></ul>
<u>29.02</u>	By simulator (e.g., computer simulates testing personnel)
<u>29.03</u>	Voltage or current determination
29.04	Voltage or current detector
<u>29.05</u>	

	Metallic loop testing
<u>29.06</u>	By dialing back the calling terminal
29.07	For a fault caused by an off-hook status
<u>29.08</u>	For a fault caused by new added service or equipment (e.g., software compatible)
29.09	With historical operating information database
<u>29.1</u> <u>29.11</u>	<ul><li> Visual output (e.g., printing, displaying)</li><li> Having telephone maintenance termination unit (e.g., MTU)</li></ul>
30 31 32.01	<ul><li> Loop impedance (e.g., resistance, capacitance)</li><li> Of line signalling generator (e.g., dial, tone code generator)</li><li>. Monitoring</li></ul>
32.02	Trunk or long line
32.03	AIN link
32.04	Subscriber line
<u>32.05</u>	Call tracing
33 35	Alarm or emergency (e.g., cut line) Listening-in or eavesdropping type
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50	FREE CALLING FROM PAYSTATION EMERGENCY OR ALARM COMMUNICATIONS (E.G., WATCHMAN'S CIRCUIT)  Personal monitoring (e.g., for the ill or infirm)  Responsive to sensed nonsystem condition  Automatic dialing  Transmission of recorded audio message  Plural conditions  Fire  Intrusion  Central office responsive to emergency call or alarm (e.g., "911", operator position display)  Called line or station condition responsive (e.g., recall if busy)  Plural alarms over single line  Announcement or alarm received at terminal station (e.g., "butt-in", alarm)  Central station with plural substations  By pulse or digital signal
36 37 38 39 40 41 42 43 44 45 46 47 48 49	FREE CALLING FROM PAYSTATION EMERGENCY OR ALARM COMMUNICATIONS (E.G., WATCHMAN'S CIRCUIT)  Personal monitoring (e.g., for the ill or infirm)  Responsive to sensed nonsystem condition  Automatic dialing  Transmission of recorded audio message  Plural conditions  Fire  Intrusion  Central office responsive to emergency call or alarm (e.g., "911", operator position display)  Called line or station condition responsive (e.g., recall if busy)  Plural alarms over single line  Announcement or alarm received at terminal station (e.g., "butt-in", alarm)  Central station with plural substations  By pulse or digital signal  With automatic dialing or transmission of recorded audio message  INCLUDING AID FOR HANDICAPPED USER (E.G., VISUAL, TACTILE, HEARING)
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 51 52	FREE CALLING FROM PAYSTATION EMERGENCY OR ALARM COMMUNICATIONS (E.G., WATCHMAN'S CIRCUIT)  Personal monitoring (e.g., for the ill or infirm) Responsive to sensed nonsystem condition Automatic dialing Transmission of recorded audio message Plural conditions Fire Intrusion Central office responsive to emergency call or alarm (e.g., "911", operator position display) Called line or station condition responsive (e.g., recall if busy) Plural alarms over single line Announcement or alarm received at terminal station (e.g., "butt-in", alarm) Central station with plural substations By pulse or digital signal With automatic dialing or transmission of recorded audio message INCLUDING AID FOR HANDICAPPED USER (E.G., VISUAL, TACTILE, HEARING AID COUPLING) HAVING NEAR FIELD LINK (E.G., CAPACITIVE, INDUCTIVE) HAVING LIGHT WAVE OR ULTRASONIC LINK FOR SPEECH OR PAGING SIGNAL
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 56.1 56.2	FREE CALLING FROM PAYSTATION EMERGENCY OR ALARM COMMUNICATIONS (E.G., WATCHMAN'S CIRCUIT)  Personal monitoring (e.g., for the ill or infirm) Responsive to sensed nonsystem condition Automatic dialing Transmission of recorded audio message Plural conditions Fire Intrusion Central office responsive to emergency call or alarm (e.g., "911", operator position display) Called line or station condition responsive (e.g., recall if busy) Plural alarms over single line Announcement or alarm received at terminal station (e.g., "butt-in", alarm) Central station with plural substations By pulse or digital signal With automatic dialing or transmission of recorded audio message INCLUDING AID FOR HANDICAPPED USER (E.G., VISUAL, TACTILE, HEARING AID COUPLING) HAVING NEAR FIELD LINK (E.G., CAPACITIVE, INDUCTIVE) HAVING LIGHT WAVE OR ULTRASONIC LINK FOR SPEECH OR PAGING SIGNAL Including fiber optic link within telephone network
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 51 52	FREE CALLING FROM PAYSTATION EMERGENCY OR ALARM COMMUNICATIONS (E.G., WATCHMAN'S CIRCUIT)  Personal monitoring (e.g., for the ill or infirm) Responsive to sensed nonsystem condition Automatic dialing Transmission of recorded audio message Plural conditions Fire Intrusion Central office responsive to emergency call or alarm (e.g., "911", operator position display) Called line or station condition responsive (e.g., recall if busy) Plural alarms over single line Announcement or alarm received at terminal station (e.g., "butt-in", alarm) Central station with plural substations By pulse or digital signal With automatic dialing or transmission of recorded audio message INCLUDING AID FOR HANDICAPPED USER (E.G., VISUAL, TACTILE, HEARING AID COUPLING) HAVING NEAR FIELD LINK (E.G., CAPACITIVE, INDUCTIVE) HAVING LIGHT WAVE OR ULTRASONIC LINK FOR SPEECH OR PAGING SIGNAL

<u>68</u> . Dynamic audio signal recording or reproduction 69 .. Call originating .. Call intercept or answering 71 ... Consecutive use of recorded phrases or words to form message 72 ... Sequential or repeated announcement during single call initiated cycle 73\_ ... Plural record carrier channels 74 ... Remote control over telephone line 75 .... Remote dictation 76 .... Announcement selection or replacement .... Control by generated tone 78 ... Acoustic coupling 79 ... With specified call initiated cycle control circuitry 80 .... Voice signal presence responsive 81 .... Call termination responsive (e.g., hang-up) 82 .... Having specified call initiation (e.g., ringing) responsive circuitry 83 .... Structural detail of storage medium drive 84 ... At switching facility (e.g., central office, switchboard) 85 .. Recording of telephone signal during normal operation 86 ... Inductive pickup .. Reproduced signal distributed over telephone line 88.01 . Voice activation or recognition 88.02 .. Voice verification (e.g., voice authorization, voiceprint, etc.) 88.03 .. Voice dialing 88.04 .. Voice controlled message management 88.05 . Multilingual system or operation 88.06 .. Language selection 88.07 . Digital signal processing (DSP) 88.08 . Message signal analysis 88.09 .. Statistical analysis (e.g., time, date, length of message, etc.) 88.1 .. Including data compression 88.11 . Display of message related information 88.12 . Indication or notification of message 88.13 . Multimedia system (e.g., voice output combined with fax, video, text, etc.) 88.14 .. Presentation format conversion 88.15 .. Pager activation 88.16 . Voice message synthesis 88.17

<u>88.18</u>	. Interaction with an external nontelephone network (e.g., Internet) . Interacting voice message systems
88.19	. Call source identification
88.2 88.21	Automatic Number Identification (ANI) Caller identification received at substation
<u>88.22</u>	. Message management
<u>88.23</u>	Controlled by subscriber or caller
88.24	By generated tone
88.25	Message storage in centralized location (e.g., central office, PBX, etc.)
<u>88.26</u>	Recording voice message from non subscriber caller
88.27	Separate storage for voice and control information
88.28	Solid state memory storage
90.01	TELEPHONE LINE OR SYSTEM COMBINED WITH DIVERSE ELECTRICAL SYSTEM OR SIGNALLING (E.G., COMPOSITE)
91.01	. Credit authorization
91.02	At switching station
92.01	. Polling
<u>92.02</u>	Televoting
92.03	Having central station equipment
92.04	Having subscriber station equipment
<u>93.01</u>	. Having transmission of a digital message signal over a telephone line
93.02	Access restricting
93.03	Personal identification
93.04	Two or more calls
<u>93.05</u>	Terminal interface circuitry
<u>93.06</u>	Digital
93.07	To plural lines or networks
93.08	Transmission scheme (e.g., compression/decompression, transmission rate)
93.09	
	Switching between different terminal types (e.g., voice/data switch)

93.12 .. Sales, ordering, or banking system 93.13 .. Amusement (e.g., game, lottery) 93.14 .. Having switching station 93.15 ... Having format conversion 93.17 .. Having station display <u>93.18</u> ... Having tone code recognition for generating alphanumeric characters 93.19 ... Having pressure or position sensitive surface (e.g., touch-screen, light pen) 93.21 ... Having conferencing <u>93.22</u> ... At pay station 93.23 ... Having user information display (e.g., telephone number, name, address, etc.) <u>93.24</u> ... Having electronic mail 93.25 ... Having remote database (e.g., videotex system) 93.26 .. By voice frequency signal (e.g., tone code) <u>93.27</u> ... Alphanumeric 93.28 ... Modulated audio tone <u>93.29</u> .... Reconfigurable 93.31 .... Protocol <u>93.32</u> ..... Initial setup 93.33 ..... Having adjustable speed 93.34 ..... Having recognition and selection 93.35 .... Having call-waiting 93.36 .... Line powered 93.37 ... Having acoustic link 100.01 . To produce visual-graphic copy (e.g., facsimile) 100.02 .. Having detachable device (e.g., detachable storage medium, scanner) 100.03 .. Usage system 100.04 .. Communication charge calculation <u>100.05</u> .. Monitoring

100.06 .. Communication status notification 100.07 .. Using mark sheet 100.08 .. Electronic mailbox <u>100.09</u> .. Relay system 100.11 .. From a library 100.12 .. Connection to plural networks or lines 100.13 .. Format conversion 100.14 .. Call signal generation (e.g., auto-dial) 100.15 .. Having switching to other communication modes <u>100.16</u> ... Voice mode 100.17 .. Transmission scheme 101.01 . Audio program distribution 102.01 . Remote control 102.02 .. Communication device <u>102.03</u> ... Entertainmemt appliance (e.g., TV, VCR, radio, etc.) 102.04 ... Power source <u>102.05</u> .. Of heating, ventilation, air conditioner (e.g., HVAC) <u>102.06</u> .. Of physical entrance or exit lock 102.07 .. Having indication 106.01 . Remote indication over telephone line (e.g., telemetry) 106.02 .. Patient monitoring <u>106.03</u> .. Meter reading 106.04 ... Having power supply circuitry 106.05 ... Having ringing suppression <u>106.06</u> ... Having time window 106.07 ... Having interrogation signal 106.08 ... Having line status detection 106.09 .. Ringing suppression

<u>106.11</u>	Interrogation signal
108.01	. Telegraphy
108.02	Over telephone line
110.01	COMPOSITE SUBSTATION OR TERMINAL (E.G., HAVING CALCULATOR,
111 112.01	RADIO) WITH USAGE MEASUREMENT (E.G., CALL OR TRAFFIC REGISTER) . Call traffic recording by computer or control processor
112.02	Redundant processor or backup processor
112.03	Estimating blocking probability
112.04	Threshold or limiting control (e.g., gapping control)
112.05	Optimization network configuration
112.06	Generalized statistics about telephone network usage
112.07	Carrier usage data
112.08	Trunk or path usage data
112.09	Specialized exchange
112.1	Traffic rate for overload
114.01	. Call charge metering or monitoring
114.02	Least cost
114.03	Billing computing software or program
114.04	Charge error detection
114.05	Special service fees (e.g., customized feature)
114.06	Variable rate
114.07	Bandwidth
114.08	Traffic
114.09	Time controlled
114.1	Incentive billing
114.11	Gaming
114.12	Discount or bargaining
114.13	Advertisement

114.14 .. Fraud detection or control <u>114.15</u> .. Calling card <u>114.16</u> ... Recharging or replenishing an account or calling card <u> 114.17</u> ... Monitoring account or card usage balance <u>114.18</u> ... Having complementary item (e.g., novelty) 114.19 ... Credit card 114.2 ... Pre-paid calling account or card 114.21 .. Redirect billing 114.22 ... Split billing or cost sharing 114.23 ... Third party billing 114.24 ... 1-800 billing 114.25 ... 1-900 billing 114.26 ... Based on unique account code <u>114.27</u> .. Portable number billing 114.28 .. Advanced intelligent billing network (e.g., a billing service control processor) 114.29 ... Using more than one advanced intelligent elements (e.g., accessing multiple AIN databases) 115.01 .. Interexchange billing operation 115.02 ... Long distance billing 115.03 ... Interfacing with foreign exchange 116 ... Hardcopy record generating 117 .. Of station on polystation or party line 118 ... Identification of station 119 .. Hardcopy record generating (e.g., ticket printing) 120 ... With line identification or class of service determination 121.01 .. At local exchange carrier (e.g., central switching office) 121.02 ... Discount charge rate or billing plan 121.03 ... Multiple billing account 121.04 ... Detail of call history and rates database 121.05 .... Call record modification 121.06 ... Having network terminating point receiving registration from subscriber terminal

<u>122</u>	With display
123	Paystation (e.g., escrow control)
124	Pulse counting or accumulating (e.g., "message metering")
125	Local or zone
<u>126</u>	Assembling billing record (e.g., automatic message account (AMA), call detail
127.01	record (CDR), etc.)
<u>127.01</u>	Having line identification associated with call billing (e.g., automatic number
427.02	identification (ANI)
<u>127.02</u>	Fraud control or billing restriction
127.03	Dilling and an huisean and
127.03	Billing code or trigger code
127.04	Pricing a call made from different account (e.g., calling card, credit card)
	Tittle Tricing a can made from americal account (eigh, caming cara, create care,
<u> 127.05</u>	Billing option selection
<u>127.06</u>	Having terminal identification
120	
128	Time of day controlled
129	Manually set (e.g., key and lock)
<u>130</u>	At subscriber station
<u>131</u>	Time controlled
132	Paystation (e.g., escrow control)
133	
	. Call traffic recording or monitoring
<u>134</u>	At central station
<u>135                                    </u>	With hardcopy record generation (e.g., ticket printing)
<u>136</u>	With display
<u>137</u>	Trunk usage (e.g., peg count)
138	All trunks busy metering
139	Counting the number of completed connections
140	At subscriber
141	
	Mechanical register
142.01	RECEPTION OF CALLING INFORMATION AT SUBSTATION IN WIRELINE COMMUNICATIONS SYSTEM
142.02	
172.02	. Blocking caller ID transmission
142.03	Using a trigger code
	Osing a trigger code
142.04	. Extracting call ID from transmitted signal
142.05	Authentication or authorization
<u>142.06</u>	Matching and retrieving stored caller ID information from a database
142.07	. Routing an incoming call on multiple lines to a particular appliance (e.g., facsimile,
	computer, or telephone)
<u>142.08</u>	. Call waiting associated with caller ID information
142.00	
<u>142.09</u>	. Non-assigned telephone number indication
<u>142.1</u>	Calley legation indigation (e.g. site; state state)
174.1	. Caller location indication (e.g., city, state, etc.)

<u>142.11</u>	. Caller local time indication
142.12	. Including master-slave modules, parent-child terminals, or controller-adjunct units
142.13	. Adaptive module coupled to telephone line or telephone device
142.14	Format conversion
<u>142.15</u>	. Connecting to an external information processing terminal (e.g., computer)
142.16	. Having broadband premise equipment (e.g., TV)
142.17	. Having display unit
142.18	. Including DTMF signal
143	WITH CHECK OPERATED CONTROL (E.G., PAYSTATION)
<u>144.01</u>	. Other than coin
144.02	Collect calling from payphone
144.03	Fraud detection in payphone
144.04	Card reader
144.05	Payphone service associated or integrated with other communication device (e.g.,
144.06	computer, fax, etc.) Special circuitry for processing accounting data
144.07	Information message notification at paystation
144.08	Visual display
145_	Fraud or interference prevention
<u>146</u>	. Coin signalling or control
147	Coin box audit or totalizer
148	Denomination
149	Post-pay coin collection
150	Coin disposition (i.e., return or collection)
<u>151</u>	Upon connection to called station
152	Magnet, electromagnet, or relay controlled from central office
<u>153</u>	Paystation (e.g., controlled by refund key)
<u>154</u>	. At central office
<u>155</u>	. At terminal station (e.g., coin paystation)
156	MULTI-LINE OR KEY SUBSTATION SYSTEM WITH SELECTIVE SWITCHING AND CENTRAL SWITCHING OFFICE CONNECTION
<u> 157</u>	. With special service
<u>158</u>	Conferencing
159	. With intercom system
160	With connection of intercom station to subscriber line
161	. With exclusion or priority feature (e.g., lockout or privacy)
162	. Detail of hold circuitry

163 164 165 166 <b>167.01</b>	Electronic . Line status indication or call alerting . Switching or supervision feature (e.g., common control, digital) . Detail of line circuit or line card PRIVATE (E.G., HOUSE OR INTERCOM) OR SINGLE LINE SYSTEM
<u>167.02</u>	. At collective house
167.03	. At booth (e.g., at theater, gas station, etc.)
167.04	Having intercom switch
<u>167.05</u>	. Doorbell system
<u> 167.06</u>	Having access code
167.07	Having remote controlling station (e.g., gate guard or attendant)
167.08	Call addressing or announcing
167.11	Having connection to telephone line
<u>167.12</u>	Having display
<u>167.13</u>	. Having telephone adaptor system
167.14	. Two-way voice channel
<u>167.15</u>	. Having transducer circuitry
168 169 170 171 172 173 174 175 176 <b>177</b> 178 179 180 181 182 183 184 185 186	. Lockout Central power source . With paging . Having plural stations with selective calling (e.g., master) With call addressing . With call addressing . Including body or apparel supported terminal (e.g., headgear) For underwater use (e.g., in diver's suit) . With central power source POLYSTATION LINE SYSTEM (I.E., PARTY LINE) . Revertive call . Call alerting (e.g., ringing) Full selective or tuned (e.g., harmonic) Semi-selective (e.g., line side, polarized) . Automatic or unattended Station identification Lockout . Portable or mobile . Central power source
<u>187</u> <u>188</u>	. Connected to central office  CALL OR TERMINAL ACCESS ALARM OR CONTROL

189 . Fraud or improper use mitigating or indication (e.g., "blue box", "black box") <u>190</u> . Time out <u>191</u> .. At switching center 192 ... Of call duration (e.g., conversation timer) 193 ... Of specific equipment <u> 194</u> . Lockout or double use signalling 195\_ .. In automatic system <u> 196</u> . At switching center <u> 197</u> .. Central office 198\_ .. PBX 199 . At substation 200 .. Restrictive dialing circuit SPECIAL SERVICES 201.01 201.02 . Service profile (e.g., calling service) 201.03 .. Creation of service (e.g., using object oriented programming, primitive, function) 201.04 .. Display arrangement 201.05 .. Distribution of service (e.g., downloading, uploading) 201.06 . Locating using diverse technology (e.g., using infrared badge, sensor, card reader) 201.07 .. Called party 201.08 .. Calling party 201.09 .. Object 201.1 .. Detecting presence or absence of party or object 201.11 . Anonymous party (e.g., protection of called or calling party's identity, privacy) 201.12 . Provisioning 202.01 . Conferencing 203.01 .. Operator control 204.01 .. Subscriber control 205.01 ... Conferencing initiation by single calling station 206.01 .. At substation 207.01 . Three-way calling 207.02 . Service trigger (activation or deactivation) 207.03 .. Time (e.g., time of day, expiration of time period, time zone, date) 207.04 .. Line or loop condition

- <u>207.05</u> ... Busy signal (e.g., off hook)
- ... Transition from off-hook to on-hook (e.g., busy to idle, hook flash)
- 207.07 ... Transition from on-hook to off-hook (e.g., idle to busy)
- 207.08 ... No answer (e.g., ringing signal, on-hook, idle)
- <u>207.09</u> .... Number of rings
- 207.1 .... Expiration of predetermined time period
- 207.11 .. Service access code
- 207.12 .. Party location
- ... Party identification or validation (e.g., personal identification number (PIN))
- <u>207.14</u> .. Dialed number identification service (DNIS)
- 207.15 .. Automatic number identification or calling number identification (ANI or CLID)
- 207.16 .. Ringing signal (e.g. having a predetermined cadence or distinctive ring)
- 208.01 . Priority override (e.g., butt-in)
- 209.01 . Repetitive call attempts (e.g., camp-on-busy, retry)
- . Reserved call (e.g., return call, call back, scheduled call, reestablished call)
- 210.02 . Call blocking
- .. Call from anonymous caller
- 211.01 . Call diversion (e.g., call capture)
- 211.02 .. Call forwarding
- 211.03 ... Sequential ringing
- 211.04 ... Simultaneous ringing
- 211.05 ... Smart card
- <u>212.01</u> .. Call transfer
- 213.01 .. Intercept (e.g., dead or changed number)
- .. Secretarial or answering service
- 215.01 . Call Waiting
- 216.01 . Abbreviated dialing or direct call (e.g., hot line)
- 217.01 . Audible paging

218.01 . Automatic directory service (e.g., on-line) 218.02 . Performed by operator (e.g., butt-in, busy verification) 219 PLURAL EXCHANGE NETWORK OR INTERCONNECTION 220.01 . With interexchange network routing 221.01 .. Alternate routing 221.02 ... Service provider selection (e.g., local or long distance, primary and alternate carriers) 221.03 ... Failure (e.g., disaster, overload, blockage) 221.04 .... Restoration (e.g., backup, recovery) 221.05 .. Based upon historical data 221.06 .. Algorithm (e.g., software, computer program) 221.07 ... Parameter optimization or enhancement (e.g., capacity or bandwidth) 221.08 .. Advanced intelligent network (AIN) 221.09 ... Service control point (SCP, ISCP, external database) 221.1 ... Signal transfer point (STP, ISTP) 221.11 ... Adjunct or intelligent peripheral (IP) 221.12 ... Service switching point (SSP) 221.13 .. Local number portability (LNP) 221.14 . Routing parameter (e.g., area code, address, service provider identifier) 221.15 . Connection call model (e.g., virtual network, displayed models) 222 . Toll center 223 .. With operator assistance 224 . Tandem switching center 225 . Multi-PBX interconnection 226 . Having a manual exchange 227 .. With an automatic exchange 228 ... Having signalling to operator 229 . Interexchange signalling <u>230</u> .. Signalling path distinct from trunk (e.g., CCIS) 231 .. Central office-to-PBX signalling 232 ... PBX trunk groups 233 ... Direct inward dialing 234 .. PBX to central office signalling (e.g., direct outward dialing) 235 .. Voice frequency signalling over trunk 236 .. D.C. signalling over trunk

<u>237</u>	Pulse or digital signalling
<u>238</u>	Having signalling repeater
<u>239</u>	Using register-sender
<u>240</u>	Interexchange trunk circuit
<u>241</u>	Glare or simultaneous seizure mitigation
<u>242</u>	CENTRALIZED SWITCHING SYSTEM
<u>243</u> <u>244</u>	. Class of service determination or transmission
<u>244                                   </u>	In common control system
<u>245</u> 246	. Identification Of line or trunk
<u>240                                    </u>	
<u>248</u>	With display Using matrix
<u>249</u>	For nuisance call mitigation
<u>250</u>	. Four-wire switching
251	. With generating of call associated substation signal
<u>252</u>	For alerting signal at called station (e.g., ringing)
<u>253</u>	Electronic
<u>254</u>	Associated with connector
255	With interrupter
256	Having automatic or through ringing
<u>257</u>	For calling station (e.g., status or progress tones)
265.01	. Call distribution to operator
265.02	Automatic call distributor (ACD) system
265.03	Reporting status (e.g., supervisory reporting)
<u>265.04</u>	Log-on or log-off of agent
	The stage of the s
<u>265.05</u>	Agent assignment (e.g., allocation of agent's time to a specific task)
<u>265.06</u>	Monitoring agent performance (e.g., quality of agent's performance)
<u> 265.07</u>	Speech of agent or customer (e.g., talk time)
<u>265.08</u>	Average call length
265.09	Having a multimedia feature (e.g., connected to Internet, E-mail, etc.)
<u>265.1</u>	Predictive (e.g., anticipating next available agent)
265.11	Routing to available agent
<u>265.12</u>	Based on agent's skill (e.g., language spoken by agent)
<u>265.13</u>	Based on type of call
265.14	Based on time (e.g., longest waiting agent)
<u>266.01</u>	Call or agent queuing
266.02	Based on type of call

266.03 .... Based on time (e.g., age of queued call, time of day, date) 266.04 .... Overflow (e.g., queue-to-queue, ACD-to-ACD) 266.05 .... Split 266.06 .... Estimating or reporting waiting time 266.07 ... Call campaign (e.g., script, application, inbound/outbound balancing) 266.08 .... Predictive algorithm 266.09 ... Home agent 266.1 ... Call record 258 . Switching controlled in response to called station addressing signal 259 .. Including deflected electron beam switching device or mechanical or optical switching control (e.g., fluidic) 260 .. With operator position or completion of call (e.g., dial "O", semiautomatic) <u> 261</u> ... Operator controlled register-sender 262 ... Call extension by operator 263 .... With call indicator or announcer 264 .... A to B operator 267 ... Operator's console 268 .. Having shared or common switching control 269 ... Distributed control 270 ... In-stage or interstage scanning (e.g., link scanning) <u> 271</u> ... Having multistage switching 272 .... Path selection or routing 273 ..... Alternate routing 274 ..... With busy or idle test 275 ..... Including marking circuit 276 ..... End-to-end marking (e.g., self-seeking) 277 ..... With busy or idle test 278 .... Interstage junctor or "trunk" 279 ... Control reliability (e.g., redundancy) 280 ... Including registering or storing device for call address signal <u> 281</u> .... Conversion between dial pulse and voice frequency signal 282 .... Voice frequency receiver <u> 283</u> ..... Dual tone multifrequency (DTMF) receiver 284 .... With processor 285 .... With magnetic memory 286 .... Signal processing (e.g., dial pulse analysis) 287 .... Electronic 288 .... Register-sender 289 ... Translator 290 ... With time division of control or supervisory signals 291

... With detail of crosspoint switching structure (e.g., crossbar) 292 .... Electronic crosspoint (e.g., solid-state) 293 .. Having line finder 294 ... Including electronic element (e.g., tube or semiconductor) 295 ... Plural 296 .. With repeater 297 .. Having specified busy-idle test 298 .. Direct control 299 ... Step-by-step system 300 .... Having plural wiper sets 301 .... Having potential control 302 .... Having rotary switch 303 .... Coordinate system (e.g., X-Y) <u>304</u> ... All relay type 305\_ ... Having motor-driven switch 306 .. With crosspoint switch detail 307 .. With power supply 308 . Switching apparatus for connecting calling line to operator's position <u>309</u> .. Call distribution or queuing 310 . Divided central (e.g., communication between switchboards) 311 .. Having signalling path feature <u>312</u> . Having multiple answering jacks for multiplied line 313 . Multiple section switchboard 314 .. Auxiliary (e.g., overflow) <u>315</u> . With line-signal control 316 .. Spring-jack cut-off 317 .. Relay cut-off 318 .. Central power source 319 . Single switchboard (e.g., cord circuit) 320 .. Switchboard circuit 321 ... Connection to operator's terminal 322 . Power supply 323 .. Power to switching equipment 324 .. Central power source (e.g., common battery, line current feed) <u>325</u> . Structure of equipment 326 .. Wire or cable distribution <u>327</u> ... Main or intermediate distribution frame 328 .. Equipment mounting or support 329 ... Allowing movement of equipment (e.g., movable, modular) 330 .. Housing 331 . Having protective circuit 332 . Plug and socket **CONCENTRATOR OR TRUNK SELECTOR** 333 334 . Concentrator-distributor pair (e.g., line concentrator) 335 . Using crossbar or crosspoint switching <u>336</u> . With magnet, electromagnet, or relay <u>337</u> . With busy-idle test (e.g., idle trunk finder)

338 339 340 341 342 343 344 345 346 347 348 349 406.01	REPEATER (E.G., VOICE FREQUENCY)  . With signal conversion (e.g., dial to DTMF, analog to PCM)  . Having line length compensation or equalization  . Pulse or tone repeater (e.g., electromechanical relay)  Electronic (e.g., logic circuitry)  . Controlled by a pilot or reference signal  . Component processes bidirectional signals  Including two-to-four wire conversion or hybrid circuit  . With frequency discriminator or negative impedance element  . With gain or attenuation control  . Transmission of power to distant repeater  . Having voice frequency transformer  ECHO CANCELLATION OR SUPPRESSION
<u>406.02</u>	. Combined diverse function
406.03	Additional signal enhancement (e.g., voice processing or recognition)
406.04	. Disable or inhibit function
406.05	. Residual echo cancellation
<u>406.06</u>	. Using digital signal processing
406.07	Using attenuator
406.08	Adaptive filtering
406.09	Least mean squares (LMS) algorithm
<u>406.1</u>	With training sequence
406.11	Convolution processing
406.12	Frequency domain analysis
406.13	Fourier analysis
406.14	Sub-band analysis
406.15	Additional analog processing
406.16	. Having analog variolosser or attenuator
350 351 352 353 354 355.01	SUPERVISORY OR CONTROL LINE SIGNALING  . Signalling integrity protection (e.g., voice signal immunity)  . Substation originated  Conversion of signal form  With called number display  Repertory or abbreviated call signal generation
<u>355.02</u>	Call address signal stored in terminal

<u>355.03</u>	Including terminal other than telephone
<u>355.04</u>	Call address signal stored in network
355.05	Modification of call address signal for abbreviated dialing
<u>355.06</u>	Modification by other than key input
<u>355.07</u>	Including modification of indicia associated with a call address
<u>355.08</u>	Including prefix in the call address signal
<u>355.09</u>	Selection of registered call address signal
<u>355.1</u>	Selection of multiple call address signals
<u>356.01</u>	Including dynamic memory
<u>357.01</u>	Insertable control element or circuitry (e.g., card)
357.02	Personal computer memory card (PCMCIA)
357.03	Acoustical generation
<u>357.04</u>	Circuitry of call signal generator
<u>357.05</u>	Including solid state memory storage
358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373.01	By motor driven dial rotating device Pulse signal generating (e.g., dialing) Voice frequency band signalling (e.g., reed devices) Electronic (e.g., tone generator) Pulse signal generator (e.g., rotary dial) Control of motor driven dial rotating device With nonrotary actuator (e.g., key or slide type) Specified switching contact (e.g., contact spring) With detail of dial return mechanism (e.g., driving spring, speed governor) Finger wheel or mechanical adjunct (e.g., finger stop) Plural-switch number input device (e.g., keypad) Detail of mounting of switch pad or dial In handset Magneto signalling . Signal reception at substation Incoming call alerting
373.02	Distinctive or selective alerting
373.03	Registration of alerting signal in association with incoming signal
373.04	Recording audio for use as the alerting signal
<u>373.05</u>	Directing incoming call to local appliance

2	<u>374.01</u>	Including musical sound generation
د	<u>374.02</u>	Including audible message generation
	374.03	Alerting by other than sight or sound (e.g., vibration)
	<u>375.01</u>	Having electronic call sounder (e.g., tone "ringer")
	<u>376.01</u>	Visual indication of incoming call (e.g., LED or light bulb)
	<u>376.02</u>	Silencing ring signal
2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	377 378 379 380 381 382 383 384 385 386 387.01	<ul> <li>. Using line or loop condition detection (e.g., line circuit)</li> <li> With current controlling electromagnetic core device (e.g., Hall-effect device)</li> <li> With optical link between line and switching system</li> <li> By bridge circuit</li> <li> Busy test or make busy</li> <li> For ring trip or polarity reversal detection</li> <li> Of plural lines</li> <li> By scanning</li> <li> Relayless</li> <li>. Signal receiver (e.g., tone decoder)</li> <li>SUBSTATION OR TERMINAL CIRCUITRY</li> </ul>
	387.02	. Conversion of signal form (e.g., A/D, frequency or phase)
	388.01	. For loudspeaking terminal
	388.02	Speakerphone with build-in microphone
	388.03	Automatic gain or volumn (AGC or AVC)
	388.04	Voice control of transmission direction
	388.05	Voice switching by attenuation/amplification
	<u>388.06</u>	Comparing signal level of receiving and transmitting circuits
	388.07	Controlling acoustic feedback
2	<u>390.01</u>	Amplification or attenuation level control
3	390.02	Filtering (FIR, HPF, Widrow-Hoff, LMS)
	390.03	Automatic gain control
	390.04	Hybrid circuit
2	391 392 392.01	<ul><li>. Sidetone control or hybrid circuit (e.g., induction coil)</li><li> Suppression (e.g., antisidetone)</li><li>. Noise suppression</li></ul>
	393_	. Hold circuit

<u>394</u>	. Impedance matching or line equalizing
<u>395</u>	. Amplifying (e.g., AGC or AVC)
<del>395</del> .01	. Power control or detection circuit
333.01	. Power control of detection circuit
<u>396</u>	. Visual signalling (e.g., lamp)
397	. Wire distribution
398	LINE EQUALIZATION OR IMPEDANCE MATCHING
<u>399.01</u>	SUBSCRIBER LINE OR TRANSMISSION LINE INTERFACE
<u> </u>	
<u>399.02</u>	. Circuitry to provide a coder and decoder function
<u>400</u>	. For line length compensation
401	Voltage boosting circuit
402	. Hybrid circuit
403	With adjustable balance circuit
404	-
405	Automatic adjustment
	Electronic noninductive
412	. Protective circuit
<u>413                                    </u>	. Power supply (e.g., battery feed)
<u>413.01</u>	Circuitry to provide ringing current supply
413.02	. Network interface device (NLD)
413.03	Including connection for alternate communication line (e.g., cable)
413.04	Connection block or module
414	TRANSMISSION LINE CONDITIONING
415	. Reactance neutralizing
<u>416</u>	. Interference suppression
417	Anticrosstalk
418	CALL SIGNAL GENERATING (E.G., RINGING OR TONE GENERATOR)
419	TERMINAL
420.01	. Having loudspeaking conversation capability (e.g., hands- free type or
	speakerphone)
420.02	Hands-free loudspeaker feature
	, , , , , , , , , , , , , , , , , , ,
<u>420.03</u>	Hands-free microphone feature
420.04	Hands-free accesory or attachment
	Ti Hallas free accessity of accasimistic
421	. Having muting
<u>422</u>	. Switch or switch actuator structure
423	Line selection
424	Receiver or handset position responsive (e.g., hookswitch)
425	With mechanism for latching hookswitch or plunger against motion
<u>426</u>	Movable holder for receiver or handset
<u>420</u> 427	
	Having plunger and lever linkage
<u>428.01</u>	. Housing or housing component
428.02	Handset or headset combined with telephone base

428.03 .. Display on telephone base 428.04 .. Base having detachable accessory 429 .. Having distinct circuitry support structure (e.g., circuit board) 430 .. Body supported (e.g., headgear) 431 .. Separate housings for earphone and microphone (e.g., candlestick type) 433.01 .. Handset structure 433.02 ... Speaker mounting (i.e., speaker phone feature) <u>433.03</u> ... Microphone mounting 433.04 ... Display on handset 43<u>3.05</u> ... Connector 433.06 ... Button or switch having specific function 433.07 .... Keypad 433.08 ... Battery 433.09 ... Card (e.g., SIM or magnetic strip card) 433.1 ... Handset having special feature (e.g., wrist watch) 433.11 ... Moveable or removeable element (e.g., cover) 433.12 .... Slideable mechanism 433.13 .... Rotatable mechanism (e.g., hinge) 432 .. Loudspeaking set 434 .. Specified terminal configuration (e.g., novelty type) 435 .. Wall set or convertible type 436 .. Desk set 437 .. Protective structure 438 ... Of cord or connector 439 ... Antiseptic 440 .. Casing or enclosure, per se 441 TERMINAL ACCESSORY OR AUXILIARY EQUIPMENT <u>442</u> . With circuit connection to terminal <u>443 </u> . Including coupler (e.g., inductive) 444 .. Acoustic <u>445</u> . Locking device <u>446</u> . Telephone receiver support 447 . Attachable to terminal housing 448 .. Hookswitch operator 449 .. Handset holder (e.g., shoulder rest) 450 .. Clips onto terminal structure

<u>451</u>	. Protective structure
<u>452</u>	Antiseptic, disinfecting, or disposable
<u>453</u>	. Hood or enclosure (e.g., booth)
<u>454</u>	. Support or stand
<u>455</u>	Handset holder
<u>456</u>	. Dialing tool
457	MISCELLANEOUS

## CROSS-REFERENCE ART COLLECTIONS

<u>900</u>	INTERNET (E.G., INTERNET PHONE, WEBPHONE, INTERNET-BASED
	TELEPHONY)
<u>901</u>	VIRTUAL NETWORKS OR VIRTUAL PRIVATE NETWORKS
902	AUTO-SWITCH FOR AN INCOMING VOICE DATA, OR FAX TELEPHONE CALL
<del></del>	(E.G., COMP/FAX/TEL)
<u>903</u>	PASSWORD
<u>904</u>	AUTO-CALLING
<u>905</u>	FAX MAIL
906	TOUCHTONE MESSAGE TRANSMISSION
907	SPEECH RECOGNITION VIA TELEPHONE SYSTEM OR COMPONENT
<u>908</u>	MULTIMEDIA
909	ALTERNATIVES
<u>910</u>	BAR CODE OR OPTICAL CHARACTER READER WITH TELEPHONE
<u>911</u>	DISTINCTIVE RINGING
912	GEOGRAPHICALLY ADAPTIVE
<u>913                                    </u>	PERSON LOCATOR OR PERSON-SPECIFIC
<u>914</u>	PROGRAMMABLE TELEPHONE COMPONENT
<u>915</u>	. "Soft" key
916	TOUCH SCREEN ASSOCIATED WITH TELEPHONE SET
917	VOICE MENUS

#### FOREIGN ART COLLECTIONS

#### FOR000 CLASS-RELATED FOREIGN DOCUMENTS

Any foreign patents or non-patent literature from subclasses that have been reclassified have been transferred directly to FOR Collection listed below. These collections contain ONLY foreign patents or nonpatent literature. The parenthetical references in the Collection titles refer to the abolished subclasses from which these Collections were derived.

FOR100	HAVING NEAR FIELD LINK (E.G., CAPACITIVE, INDUCTIVE) (379/55)
FOR101	HAVING ELECTROMAGNETIC LINK FOR SPEECH OR PAGING SIGNAL (E.G., LIGHT WAVE LINK) (379/56)
FOR102	. Control of selectively responsive paging arrangement over telephone line (379/57)
FOR112	TELEPHONE LINE OR SYSTEM COMBINED WITH DIVERSE ELECTRICAL SYSTEM OR SIGNALLING (E.G., COMPOSITE) (379/90)
FOR113	. Credit authorization (379/91)
FOR114	. Polling (e.g., audience survey) (379/92)
FOR115	. With transmission of a digital message signal over a telephone line (379/93)

**FOR116** .. Including switching station (379/94) **FOR117** .. Access restricting (379/95) **FOR118** .. Including terminal for display of digital information (379/96) FOR119 .. By voice frequency signal (e.g., tone code) (379/97) FOR120 ... By modulated audio tone (379/98) FOR121 ... Having acoustic link (379/99) **FOR122** . To produce visual-graphic copy reproduction (e.g., facsimile) (379/100) FOR123 . Audio program distribution (379/101) FOR124 . Remote control (379/102) **FOR125** .. Of entrance or exit lock (379/103) **FOR126** .. With indication (379/104) FOR127 .. From terminal (379/105) FOR128 . Remote indication over telephone line (e.g., telemetry) (379/106) FOR129 .. Meter reading (379/107) FOR130 . Telegraphy (379/108) FOR131 .. Over telephone line (379/109) COMPOSITE SUBSTATION OR TERMINAL (E.G., HAVING CALCULATOR, **FOR132** RADIO) (379/110) WITH AUDIO MESSAGE STORAGE AND RETRIEVAL (379/67) FOR133 FOR134 . Stored in digital form (379/88) FOR135 .. Subscriber control of central office message storage or retrieval (379/89) FOR136 . DIAGNOSTIC TESTING, MALFUNCTION, INDICATION, OR ELECTRICAL CONDITION MEASUREMENT (379/1) FOR137 .. By loopback (379/5) **FOR138** .. By analysis of injected tone signal (379/6) FOR139 .. By automatic testing sequence (e.g., programmable, scanning) (379/10) FOR140 . Of automatic switching equipment (379/15) FOR141 .. Fault detection or location (e.g., continuity, leakage) (379/26) FOR142 . Of subscriber loop or terminal (379/27) **FOR143** .. Terminal arrangement to enable remote testing (e.g., testing interface) (379/29)

FOR144 . Indication of nonstandard condition of telephone equipment (379/32) **FOR145** .. SERVICE MONITORING OR OBSERVATION (379/34) FOR146 . Computer or processor control (379/112) FOR147 .. Call traffic recording (379/113) FOR148 .. Call charge metering or monitoring (379/114) FOR149 ... Interexchange operations (379/115) FOR150 AT CENTRAL OFFICE (379/121) FOR151 . Having line identification (e.g., automatic number identification-"ANI") (379/127) WITH CALLING NUMBER DISPLAY OR RECORDING AT CALLED SUBSTATION FOR152 (379/142)FOR153 . Other than coin (379/144) FOR154 . PRIVATE (E.G., HOUSE OR INTERCOM) OR SINGLE LINE SYSTEM (379/167) FOR155 . SPECIAL SERVICES (379/201) FOR156 .. Conferencing (379/202) FOR157 .. Operator control (379/203) FOR158 . Subscriber control (379/204) FOR159 .. Conference initiation by single calling sation (379/205) FOR160 ... At substation (379/206) FOR161 .... At plural exchange (379/207) FOR162 .. Priority override (e.g., butt-in) (379/208) FOR163 ... Repetitive call attempts (e.g., camp-on-busy, retry) (379/209) FOR164 ... Call diversion (e.g., call capture) (379/210) FOR165 .. Call forwarding (379/211) FOR166 ... Call transfer (379/212) FOR167 ... Intercept (e.g., dead or changed number) (379/213) FOR168 ... Secretarial or answering service (379/214) FOR169 .. Call waiting (379/215) FOR170 . Abbreviated dialing or direct call (e.g., hot line) (379/216) FOR171 .. Audible paging (379/217)

<u>FOR172</u>	Performed by operator (e.g., butt-in, busy verification) (379/218)
FOR173	. With interexchange network routing (379/220)
FOR174	. Alternate routing (379/221)
FOR175	Call distribution to operator (379/265)
FOR176	Call queuing (379/266)
FOR177	Repertory or abbreviated call signal generation (379/355)
FOR178	With dynamic memory (379/356)
FOR179	Insertable control element or circuitry (e.g., card) (379/357)
FOR180	. Incoming call alerting (e.g., ringing) (379/373)
FOR181	. With music or audible message generation (379/374)
FOR182	With electronic call sounder (e.g., tone "ringer") (379/375)
FOR183	With visual indication of incoming call (379/376)
FOR184	SUBSTATION OR TERMINAL CIRCUITRY (379/387)
EOD10E	F. J. J. and J. and J. and J. (270 (200))
<u>FOR185</u>	. For loudspeaking terminal (379/388)
FOR186	With circuitry for voice control of transmission direction (379/389)
FOR186	With circuitry for voice control of transmission direction (379/389)
FOR186 FOR187	With circuitry for voice control of transmission direction (379/389) With amplification or attenuation level control (379/390)
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FOR186 FOR187 FOR188 FOR189 FOR190 FOR191 FOR192 FOR193	With circuitry for voice control of transmission direction (379/389)  With amplification or attenuation level control (379/390)  SUBSCRIBER LINE OR TRANSMISSION LINE INTERFACE (379/399)  . Echo suppresion, antisinging, or reverse path blocking (379/406)  Disable or inhibit (379/407)  Control by pilot frequency signal (379/408)  Having variolosser or attenuator (379/409)  Echo cancellation (e.g., phase opposition) (379/410)  Having transversal filter (379/411)  . Having loudspeaking conversation capability (e.g., hands-free type or
FOR186 FOR187 FOR188 FOR189 FOR190 FOR191 FOR192 FOR193 FOR194	With circuitry for voice control of transmission direction (379/389)  With amplification or attenuation level control (379/390)  SUBSCRIBER LINE OR TRANSMISSION LINE INTERFACE (379/399)  . Echo suppresion, antisinging, or reverse path blocking (379/406)  Disable or inhibit (379/407)  Control by pilot frequency signal (379/408)  Having variolosser or attenuator (379/409)  Echo cancellation (e.g., phase opposition) (379/410)  Having transversal filter (379/411)
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